

# RECLAMATION

*Managing Water in the West*

## **Palo Verde Ecological Reserve Habitat Restoration**

**Environmental Assessment  
LC-05-45**



**U.S. Department of the Interior  
Bureau of Reclamation  
Lower Colorado Region  
Boulder City, Nevada**

**February 2006**

## **Mission Statements**

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

# Palo Verde Ecological Reserve Habitat Restoration

## Environmental Assessment (Number: LC-05-45)

**Proposed Action:** The Proposed Action is to implement a part of the Lower Colorado River Multi-Species Conservation Program (LCR MSCP). The proposed project will replace existing agriculture with native riparian habitat on the Palo Verde Ecological Reserve (PVER) located near Blythe, California.

A general description of the Proposed Action, affected environment, impacts and mitigation can be found in the LCR MSCP, LCR MSCP Final Environmental Impact Statement/Environmental Impact Report (FEIS/FEIR), LCR MSCP Final Habitat Conservation Plan (HCP), and Final Biological Assessment (December 2004). These and other associated LCR MSCP documents and information can be found on the Bureau of Reclamation's MSCP website at <http://www.usbr.gov/lc/lcrmscp/>. The original documents are also available upon request from the Lower Colorado Regional Office of the Bureau of Reclamation in Boulder City, Nevada. As noted, information that appears in this Environmental Assessment (EA) tiers to the above referenced documents.

This activity is an authorized project under the Colorado River Front Work and Levee System Act, the Boulder Canyon Act, and the Endangered Species Act.

### Location of Proposed Action:

The PVER occupies a portion of the historic Colorado River floodplain in the southeastern portion of Riverside County, California, approximately five miles

north of Blythe, California. PVER lies within one of the most northern parcels of agricultural land within the Palo Verde Valley. This proposal is located in Reach 4 as identified in the LCR MSCP and FEIS/FEIR. The California Department of Fish and Game, owns and has provided the 1,300 acres proposed for the PVER. Approximately 1,254 acres are currently agricultural fields.

Refer to Maps A and B for the location of the PVER and the Proposed Action.

**Special Note:**

This Environmental Assessment (EA) is available for public review and comment for a period of fifteen days from the date of its posting on this website. Please send your comments via e-mail to [jjamrog @ lc.usbr.gov](mailto:jjamrog@lc.usbr.gov). Comments received within the comment period will be considered in Reclamation's final decision and determination of a Finding of No Significant Impact (FONSI) for this action.

If you have any questions or wish to have a hard copy of the EA, please call John Jamrog with the Bureau of Reclamation, Lower Colorado Regional Office, at (702) 293-8675.

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# Introduction

## A. Background

The LCR MSCP is a multi-stakeholder Federal and non-Federal partnership responding to the need to balance legal use of the lower Colorado River water resources with the conservation of threatened and endangered species (T&E) and their habitats, to comply with the Endangered Species Act. Reclamation is the implementing agency for the LCR MSCP.

A goal of the LCR MSCP is to establish the following new habitats along the LCR:

- 5,940 acres of cottonwood and/or willow
- 1,320 acres of honey mesquite
- 512 acres of marsh
- 360 acres of backwaters

The 1,300 acres included in this Proposed Action has been selected to restore a variety of cottonwood, willow and/or honey mesquite habitat in partial fulfillment of the above goal.

The entire habitat will be managed and maintained for the 50-year life of LCR MSCP. Provisions are also made to ensure the habitat is maintained beyond that period. Some of the species anticipated to use cottonwood willow habitat are: southwestern willow flycatcher (federally endangered), yellow-billed cuckoo (federal candidate), western red bat, western yellow bat, Yuma hispid cotton rat, elf owl, gilded flicker, Gila woodpecker, vermilion flycatcher, Arizona Bell's vireo, Sonoran yellow warbler, and summer tanager (LCR MSCP Chapter 5, Table 5.5).

Southwestern willow flycatchers require early succession (younger) tree communities such as cottonwood and willow, while yellow-billed cuckoos require more mature tree communities. Reclamation and its partners will continually monitor habitat conditions to ensure that the proper habitat structure is present through the 50-year period.

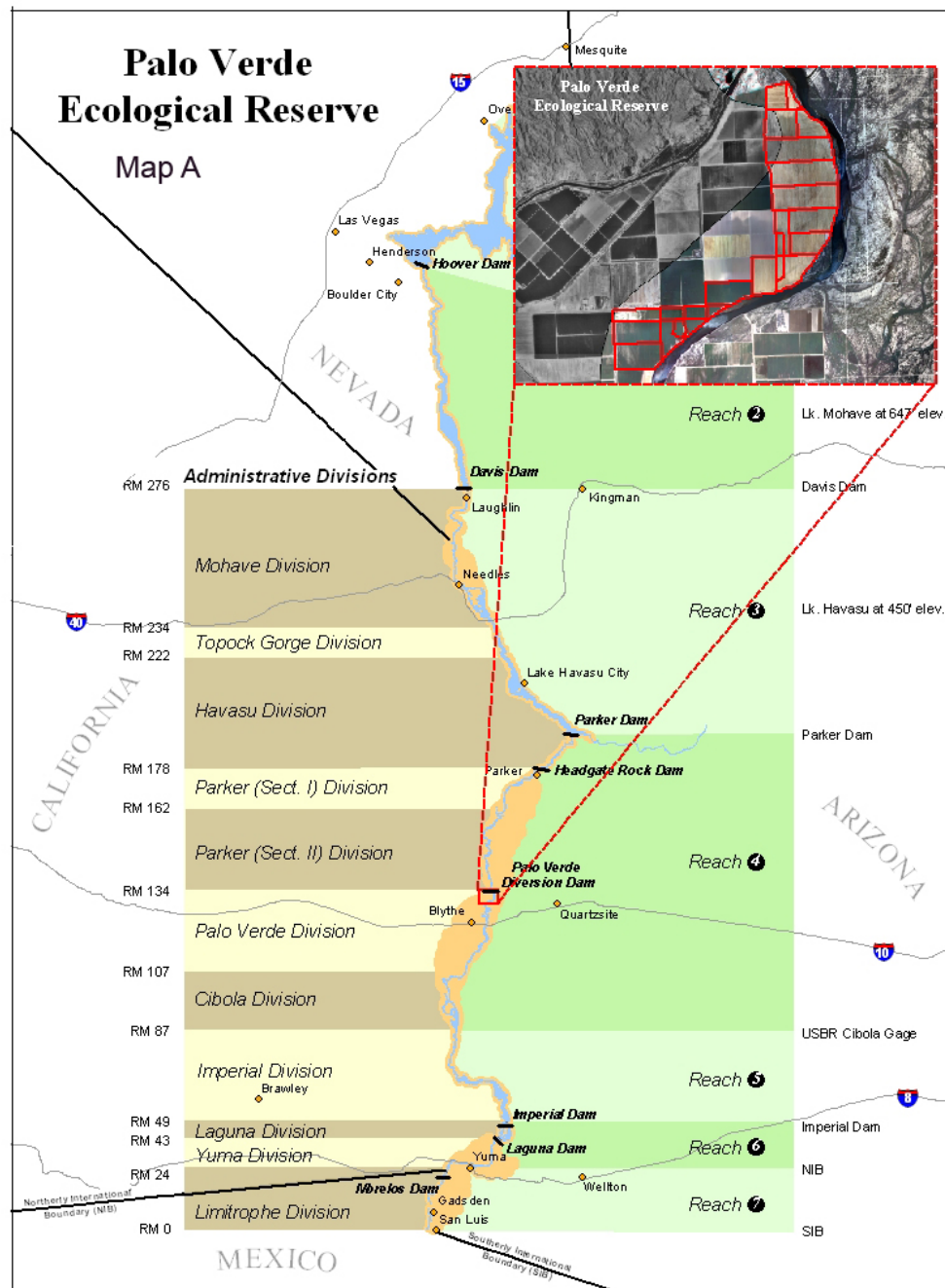


Figure A: Palo Verde Ecological Reserve

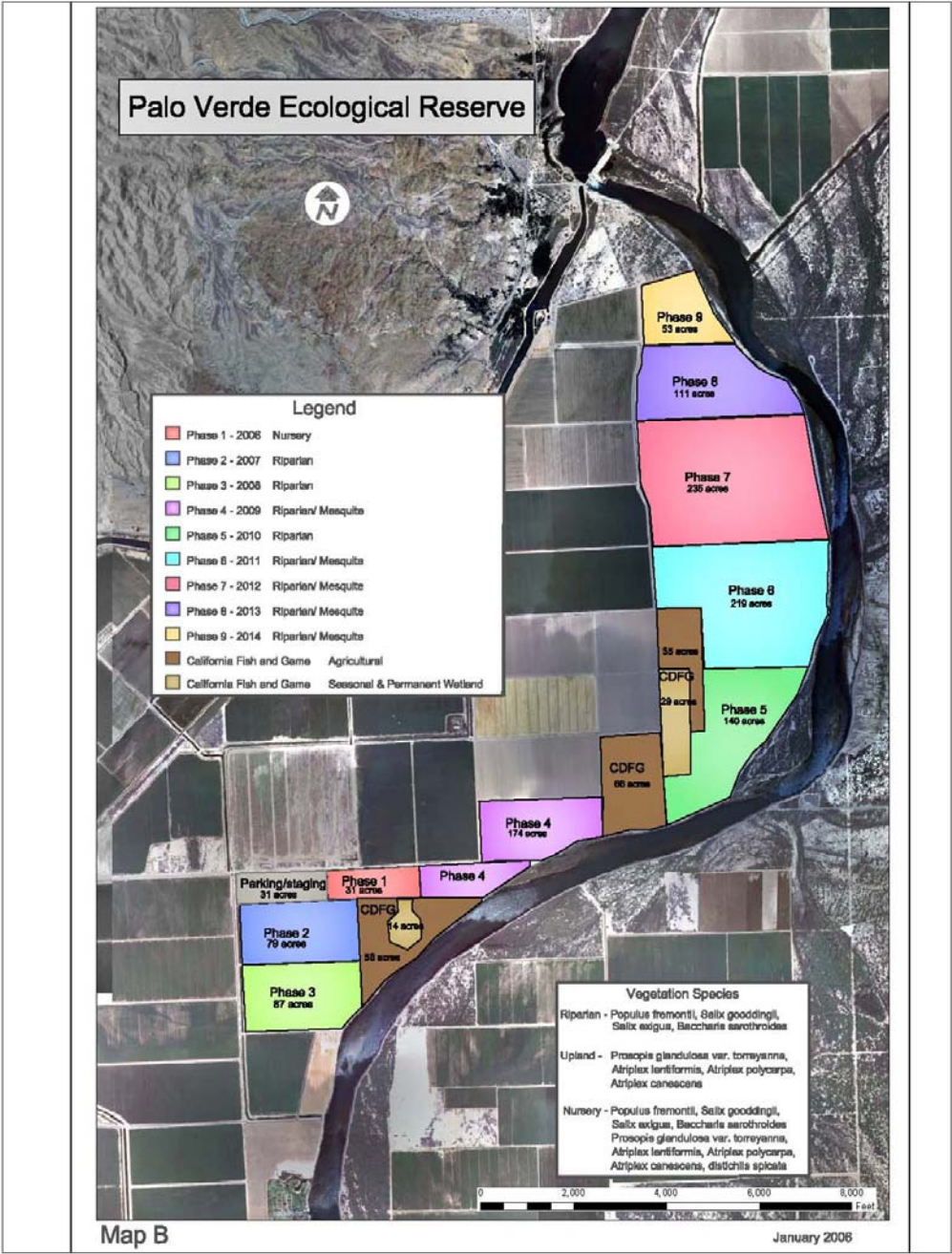


Figure B: Palo Verde Ecological Reserve Vegetation Species

Mesquite habitat may also be created in order to create an integrated mosaic of habitat. MSCP covered species expected to use this habitat include the Arizona Bell's vireo.

## **B. Purpose and Need for Proposed Action**

The purpose of the Proposed Action is to establish some of the habitat described above in partial fulfillment of the goals of the MSCP.

This action will create and maintain suitable habitat for federally listed T&E species, including LCR MSCP covered species, as identified by the LCR MSCP. The proposed project will convert approximately 1,000 to 1,300 acres of existing agricultural lands to cottonwood-willow and/or honey mesquite habitat types.

While the habitats to be created are those that are required by MSCP covered species, it is noted here that all other species that use or depend on the cottonwood, willow and mesquite habitats will benefit as well.

## **Description of Proposed Action and Alternatives**

### **A. No Action Alternative**

Planting will not occur in this area and potential habitat will not be created for threatened and endangered species along this section of the lower Colorado River. Other areas will need to be located and utilized, to accomplish the LCR MSCP habitat targets.

No Action will keep the area under the present agricultural management regime, primarily alfalfa and grain production.

### **B. Proposed Action**

This proposed project is a part of the 2005 LCR MSCP. The intent of this project is to convert up to 1,300 acres of agricultural lands to native riparian habitat. A mosaic of cottonwoods (*Populus fremontii*), Gooding's willow (*Salix gooddingii*), and coyote willow (*Salix exigua*) is the desired plant community at this site.

Honey mesquite (*Prosopis glandulosa*), seep willow, (*Baccharis sarothroides*), quail bush (*Atriplex* sp), and other upland vegetation would be established on these lands in various configurations. In addition to these species, ground-cover species such as, salt grass (*Distichlis spicata*) may be planted.

Various types of planting methods will be used to establish the vegetation, depending on site conditions, the desired outcome, and the application of an Adaptive Conservation Management Plan. A cottonwood and willow nursery will be established on 30 acres of the PVER. The nursery will supply material for future planting (e.g., cuttings, poles).

The majority of the planting and collecting activities will take place in the fall, winter, and early spring of each year. This will be done at this time to ensure that T&E listed species and birds listed under the Migratory Bird Treaty Act (MBTA) will not be present at the PVER, and plant material collection sites, while these activities are being conducted.

Moist soil conditions are required by some listed species. To accomplish this, ground preparations may include mechanical and hand excavation to sculpt and/or create low areas for water retention. Soil amendments and soil cements may also be used in these areas to increase water retention. Over time, debris from trees and the various ground covers will add organics to the soil, which will increase the moisture retention capacity.

Several phases of construction will occur over the next 10 years at the PVER. An Adaptive Conservation Management Plan is being prepared by Reclamation to ensure these actions will meet the habitat goals for the next 50 years.

The project area is currently in agricultural use. As such, there is existing infrastructure (water pumps, ditches etc.) available for use to irrigate these plantings. The existing infrastructure lessens the need for extensive land disturbing activities that aids in complying with air quality, water quality and other environmental standards. This infrastructure may require minor upgrades and repair. Water for the project is available from the Palo Verde Irrigation District (PVID).

Site-specific surveys will be conducted for non-covered species to implement measures to minimize impacts to the extent feasible without affecting covered species.

None of these actions would substantially increase the rate or amount of surface runoff in a manner that would result in flooding on/or off site.

### **C. Combination Alternative**

A third alternative is to leave some of the acreage under agricultural production and not convert the entire 1,300 acres to native riparian habitat. Approximately 100 to 325 acres would remain unchanged and would have open fields for food production for migratory birds such as doves, and native resident game birds, including quail. Bird hunting is an important recreational use of this area by hunters. Under this alternative, limited upland bird hunting could be allowed in the area, if determined to be compatible with habitat objectives.

### **D. Alternatives Considered But Eliminated from Detailed Analysis**

None

## **Affected Environment and Environmental Impacts**

PVER lands have been continually farmed by machinery at least since 1939. The property consists of approximately 1,352 acres; of these, 1,254 acres are currently under cultivation (i.e., alfalfa, wheat). The remaining lands on the property consist of roads, irrigation systems, or other infrastructure.

Lands bordering the PVER to the north and west are farms that produce primarily cotton, alfalfa, and wheat. To the south some of the lands are being farmed, but some of these acres have been removed from farming for residential development. The eastern boundary of the PVER is the Colorado River.

There is an existing irrigation system of 9.2 miles of concrete ditches and associated slide gates. Two pumps provide water for the existing irrigation system.

There are no buildings on the property. At one time structures associated with a feedlot stood near the south end of the PVER. These were demolished on site and

buried down to as much as seven feet (personnel communication, California Fish and Game, 2005).

Cultural resource surveys were completed on the PVER. No sites were found on the property.

PVER is within the old floodplain of the Colorado River. It is remnant deposition terrace comprised of sand and silts. Soils present are well drained. Other characteristics of these soils are their low available water capacity and their rapid permeability (USDA 1974).

Following are a list of critical elements of the human environment that may or may not be affected by the Proposed Action or alternatives. These elements are addressed below as required by statutes, regulations, or executive and secretarial orders.

**Table 1-1. Summary of Critical Elements.** The table shows critical elements that may or may not be affected by the Proposed Action or alternatives.

Critical Element	Affected		Critical Element	Affected	
	Yes	No		Yes	No
Air Quality	X		Indian Sacred Sites		X
Cultural Resources		X	Indian Trust Assets		X
Environmental Justice		X	T & E Species		X
Farmlands, Prime/Unique	X		Water Quality		X
Floodplains	X		Wetlands/Riparian Zones		X
Hazardous Materials		X	Wild & Scenic Rivers		X
Land Use	X		Visual resources	X	

Appendix A includes a summary comparison of environmental impacts identified in the LCR MSCP FEIS/FEIR that are applicable to the No Action Alternative, Combined Alternative and Proposed Action Alternative of this EA. They are incorporated by reference into this analysis.

## A. No Action Alternative

There will be no change in effects to air quality, cultural resources, environmental justice, hazardous materials, farmlands, floodplains, Indian sacred sites, Indian trust assets, water quality, wild and scenic rivers, topography, geology, soils and mineral resources.

Some negative effects from the No Action Alternative are expected regarding T&E species, as well as Wetlands and Riparian Zones. Effects to T&E species include not planning for future needs of T&E species and their habitats as identified in the EIS and BO. Reaching goals of increased southwestern willow flycatcher habitat may be required in the future if suitable sites cannot be located elsewhere. Future compliance with the restoration goals may be compromised leading to a future re-initiation of Section 7 of the Endangered Species Act.

No change in use of the area is expected. The primary use of the area is agriculture. Recreational activities include upland bird hunting for mourning and white-winged dove, as well as quail. Fishing in the Colorado River proximate to the PVER also occurs to some degree.

The LCR MSCP would not receive any credits for mitigation and Reclamation will need to find other ways and places to meet their MSCP goals.

## **B. Proposed Action**

No impacts to topography, geology, soils and mineral resources are expected. There will be insignificant impacts to cultural resources, environmental justice, hazardous materials, Indian sacred sites, Indian trust assets, water quality, and wild and scenic rivers.

The LCR MSCP FEIS/FEIR states that there will some impacts to air quality (Chapter 3.3), farmlands (Chapter 3.2), land use and visual resources (Chapter 3.11). However, these impacts will not exceed established standards. Where no standards exist, best management practices (BMP'S) will be used. It is anticipated that a slight long-term improvement in air quality may occur due to greatly reduced ground disturbing activities associated with agriculture such as plowing, harvesting, etc.

Presently, the affected fields are either fallow or planted in alfalfa or grain. These agricultural crops would be replaced with cottonwoods, willows, honey mesquite, seep willow, and quail bush. In addition, a ground cover of salt grass, or other types of ground cover, would be planted on some of the PVER acres. The proposed conversion of agricultural crops to native wildlife habitat is likely considered an allowable use under the Farmland Protection Policy Act (7 U.S.C. 4201).

There is a slight chance that there would be a small number of agricultural jobs affected by the Proposed Action, however it is unknown whether this effect will be a loss or gain of jobs. Reclamation is currently working with PVID, which in turn, works with the State of California's agricultural worker assistance programs. Through these programs, any agricultural workers that may be displaced by the project are notified and provided social services, including job hunting and placement assistance.

T&E species would benefit from creating habitat for southwestern willow flycatcher and other riparian species. Covered species are not expected to be present in agricultural areas and, thus would not be affected by the conversion of these land types.

Formal consultation with the FWS regarding T&E species was completed. This project while implementing the LCR MSCP and associated covered actions, meets all applicable requirements of that consultation.

Local recreational activities may be affected by conversion of the 1,300 acres from alfalfa and grain to trees. Over the 10-year period, dove use of the area may diminish as well as the associated hunting. There is a significant amount of dove hunting in the area depending on prevailing agricultural practices and public access. Other wildlife species populations that prefer cottonwood and willow and upland vegetation species should increase. No sport fishing would be affected.

Access into the area may be restricted during the first years of tree planting. However, not all of the area will be closed. Some areas will remain open to public access depending on the planting scheme. Overall, there will be less access than at present.

## **C. Combination Alternative**

The impacts from this alternative are the same as for the above alternative except that there would be fewer acres of land treated and less impact to local upland bird hunting.

The native riparian habitat to be developed may also provide habitat for white-wing and mourning doves. Heavy concentrations of doves have been observed in salt cedar as well as honey mesquite areas near Yuma, AZ. However, conversion of the area into dense habitat may make the area more difficult to hunt.

## **D. Cumulative Impacts**

The conversion of agriculture crops or fallow croplands to the targeted LCR MSCP habitat types will occur wherever suitable sites and water are made available to Reclamation along the LCR in order to meet the LCR MSCP goals. The activities and impacts from these conversions are expected to be similar or identical to those addressed in this EA.

Chapter 4.0 of the LCR MSCP FEIS/FEIR contains a cumulative effects analysis. This analysis, as it applies to the Proposed Action and Combination Alternative, is summarized and incorporated by reference below.

The Proposed Action and Combination Alternative would have the potential for construction-related impacts on biological resources, but these would be cumulatively less than significant. Impacts would be temporary and localized and would not cause substantial adverse changes to vegetation or wildlife communities along the LCR. Moreover, the project will be constructed on farmland, thus minimizing the potential for impacts on biological resources.

The Proposed Action and the Combination Alternative would result in increased ambient noise levels during construction, but impacts would be considered cumulatively less than significant because noise impacts are highly localized, and impacts would be temporary, lasting only for the duration of the construction. Both projects also would have only minor, temporary, and localized construction-related impacts on hazards, geology and soils, and water quality, and the impact on these resources would be cumulatively less than significant.

“Important Farmland” is classified by the US Department of Agriculture as land that is especially suited for producing crops due to the physical and chemical properties of the soil. The Proposed Action and the Combination Alternative would result in the conversion of a small amount of Important Farmland to other land cover types. Other activities proposed by the LCR MSCP could affect agricultural resources as well. However, the effect on farmland from fully implementing the HCP together with the other actions covered by the HCP would be less than significant. This is because these actions would affect a small percentage of the total available farmland within the planning area. Furthermore, the impact may be offset by new agricultural development expected in the planning area.

## **E. Environmental Commitments**

Appendix B includes a list of the Avoidance and Minimization Measures (AMM) and Monitoring and Research Measures (MRM) that apply to this project. These are tiered from the Final Biological Assessment and Chapter 5 of the HCP.

Appendix A also includes mitigation measures that apply to this project that are incorporated by reference from Table 6.4-1 of the LCR MSCP FEIS/FEIR. In addition, Appendix C includes Mitigation Measures and Best Management Practices (BMPs) that apply to this project. They are taken directly from the text of the LCR MSCP FEIR/FEIS.

## **F. Residual Impacts (if any)**

None expected

## **G. Irreversible and Irretrievable Impacts (if any)**

The irreversible and irretrievable impacts were documented and analyzed in Chapter 6.3 and Table 6.4-1 in the LCR MSCP FEIS/FEIR, and are incorporated by reference. This project will not cause any irretrievable or irreversible effects. The land converted in the PVER could be changed back to its present condition and habitat.

## **Consultation and Coordination**

Thorough consultation and coordination regarding these proposed actions is documented in Chapter 7.2, page 7-13, of the LCR MSCP FEIS/FEIR.

Reclamation personnel continue to coordinate with, and solicit input and recommendations from, CDFG for this proposed project.

A programmatic FEIS/FEIR was completed for the LCR MSCP that covers the construction of 8,132 acres of riparian habitat within the lower Colorado River corridor and contributing drainages. Extensive coordination and consultation was conducted during the preparation of the Draft and Final EIS/EIR, as documented in Chapter 7 of the referenced document. The FEIS/FEIR is posted on the web at <http://www.usbr.gov/lc/lcrmscp/>.

The CDFG owns the property on which the Proposed Action would be implemented. The agency agreed to make this land available to the MSCP for

restoration purposes. The agreement is included in the California Endangered Species Act (CESA) 2081 Permit covering MSCP activities in California.

No cultural resources were identified during the Class III pedestrian survey of the property. Reclamation archaeologists have recommended no properties/no effect for the project to the California State Historic Preservation Office (CA SHPO).

Reclamation, along with other Federal and non-Federal participants, worked together with the US Fish and Wildlife Service (FWS) to develop the LCR MSCP, HCP and FEIS/FEIR. Reclamation requested formal consultation with the FWS for the implementation of the LCR MSCP HCP on November 29, 2004. In response, on March 4, 2005, the FWS issued a Biological and Conference Opinion (BCO) on the Lower Colorado River Multi-Species Conservation Program, Arizona, California, and Nevada (02-21-04-F-0161). The Proposed Action is covered by this BCO.

## **A. Persons/Agencies Consulted**

A list of agencies consulted is in the above documents incorporated by reference.

## **B. Scoping/Public Involvement**

Scoping and public involvement was completed during the development of the LCR MSCP Draft and Final EIS/EIR. This is documented in Chapter 7.2.1, 7.2.2 and 7.2.3 of the FEIS/FEIR.

In addition, this Environmental Assessment will be posted on the Reclamation website at <http://www.usbr.gov/lc/lcrmscp/> for a period of 15 days for public review.

## **List of Preparers/ID Team Members**

Jim Gacey, Wildlife Biologist  
Gail Iglitz, Landscape Architect, Project Manager  
Mark Slaughter, Archaeologist  
Anthony Vigil, Environmental Protection Specialist  
John Jamrog, Environmental Compliance Group Manager

## Distribution List

A copy of this EA will be sent to the California Department of Fish and Game. The distribution list of the Draft and Final LCR MSCP EIS/EIR included over 240 entities.

## References

Bureau of Reclamation. Lower Colorado River Multi-Species Conservation Program. 2004. Lower Colorado River Multi-Species Conservation Program, Volume I. Programmatic Environmental Impact statement/Environmental Impact Report. December 17. Sacramento, CA.

Bureau of Reclamation. Lower Colorado River Multi-Species Conservation Program. 2004. Lower Colorado River Multi-Species Conservation Program, Volume II. Habitat Conservation Plan. Final. December 17. (J&S 00450.00) Sacramento, CA.

Bureau of Reclamation. Lower Colorado River Multi-Species Conservation Program. 2004. Lower Colorado River Multi-Species Conservation Program, Volume III: Biological Assessment. Final. December 17. (J&S 00450.00) Sacramento, CA.

US Fish and Wildlife Service. 2004. Biological and Conference Opinion on the Lower Colorado River Multi-Species Conservation Program, Arizona, California, and Nevada. USDI. Fish and Wildlife Service, Albuquerque, New Mexico (02-21-04-F-0161).

**APPENDIX A. Summary of Impacts and Mitigation Measures Applicable to this Project (Adapted from Table 6.4-1 of the LCR  
MSCP FEIR/FEIS)**

Note: Only the No Action and Proposed Action columns apply to the PVER habitat restoration project

**Table 6.4-1. Summary of Impacts and Mitigation Measures**

Impact	APPLICABLE ALTERNATIVE				Mitigation Measure	Unavoidabl e Adverse Impacts
	No Action	Proposed Action	Listed Species Only	Off-Site Conservation		
AESTHETICS						
AESTH-1: Construction/maintenance activities would temporarily lessen the visual quality of the conservation area establishment sites located on or near visually sensitive resources ( <i>less than significant impact</i> ).	X	X	X	X	None required	None
AESTH-2: The construction of field facilities and fish-rearing facilities could be required, which could alter the visual quality of the selected sites ( <i>less than significant impact</i> ).	X	X	X	X	None required	None
AESTH-3: Conservation area establishment would return sites to a more natural appearance ( <i>beneficial impact</i> ).	X	X	X	X	None required	None
AGRICULTURAL RESOURCES						
AG-1: Important Farmland could be converted to a nonagricultural use ( <i>less than significant impact</i> ).	X	X	X	X	None required	None
AG-3: Runoff from established conservation areas could alter the slopes of adjoining laser-leveled fields ( <i>significant impact</i> ).	X	X	X	X	AG-1: Develop grading plans for newly established conservation areas that direct runoff away from adjacent agricultural lands to ensure that flow rates from the conservation area do not exceed existing discharge rates.	None

AG-4: Covered species attracted to established conservation areas could disperse to other lands within the planning area ( <i>less than significant impact</i> ).	X	X	X	X	None required	None
AIR QUALITY						
AQ-1: The use of fossil fuel-fired construction equipment during construction, maintenance, and operational activities would result in intermittent combustive emissions that would not violate any air quality standard or contribute substantially to an existing or projected air quality violation ( <i>less than significant impact</i> ).	X	X	X	X	None required	None

**Table 6.4-1. Summary of Impacts and Mitigation Measures (continued)**

Impact	APPLICABLE ALTERNATIVE				Mitigation Measure <sup>3</sup>	Unavoidable Adverse Impacts
	2 No Action <sup>1</sup>	1 Proposed Action	3 Listed Species Only <sup>2</sup>	4 Off-Site Conservation		
AIR QUALITY						
AQ-2: The development of the largest projects would produce fugitive dust emissions that could exceed an ambient 24-hour PM10 standard ( <i>significant impact</i> ).	X	X	X	X	AQ-1: Implement standard operating practices to minimize fugitive dust (PM10) emissions during construction activities.	Potentially Significant
AQ-3: Emissions from the largest prescribed burns during terrestrial vegetation establishment or maintenance activities would produce emissions that could contribute to an exceedance of an ambient 24-hour PM10 standard ( <i>significant impact</i> ).	X	X	X	X	AQ-2: Implement a smoke management plan for all construction and maintenance activities involving the use of fire.	Potentially Significant
AQ-4: Air emissions from proposed conservation area establishment activities and facility construction could exceed the MDAQMD daily NOX or PM10 emission significance thresholds, which would result in a cumulatively considerable net increase of a no attainment pollutant ( <i>significant impact</i> ).	X	X	X		See Mitigation Measure AQ-1.	Significant
AQ-5: Air emissions from the proposed conservation area establishment activities would not expose	X	X	X	X	None required	None

sensitive receptors to substantial pollutant concentrations ( <i>less than significant impact</i> ).						
AQ-6: Air emissions from the proposed conservation area establishment activities would not create objectionable odors that affect a substantial number of people ( <i>less than significant impact</i> ).	X	X	X	X	None required	None
BIOLOGICAL RESOURCES						
BIO-1: Issuance of the section 10(a) (1) (B) permit would authorize the incidental take of up to 27 covered species from implementation of both the covered activities and the Conservation Plan ( <i>less than significant impact</i> ).		X	X	X	None required	None

Impact	APPLICABLE ALTERNATIVE				Mitigation Measure <sup>3</sup>	Unavoidable Adverse Impacts
	2 No Action <sup>1</sup>	1 Proposed Action	3 Listed Species Only <sup>2</sup>	4 Off-Site Conservation		
BIOLOGICAL RESOURCES						
BIO-2: The establishment of 7,260 acres of cottonwood-willow and honey mesquite land cover would increase the extent of cottonwood-willow riparian forest and mesquite woodland sensitive communities ( <i>beneficial</i> ).	X	X	X <sup>4</sup>	X	None required	None
BIO-3: Clearing, grading, planting, and site maintenance during conversion of agricultural lands to cottonwood-willow and/or honey mesquite land cover types would result in the elimination of existing low value habitat used by resident and migratory wildlife, removal of weedy vegetation and crops, alteration of habitat characteristics through changes in local hydrology and exposure of soil to	X	X	X	X	None required	None

erosion, and elimination or displacement of resident wildlife ( <i>less than significant short-term impacts; beneficial long-term impacts</i> ).						
ENVIRONMENTAL JUSTICE						
EJ-3: If agricultural land were converted to conservation areas, the loss of agricultural jobs would disproportionately affect minority and low-income populations.	X	X	X	X	EJ-1: Reclamation shall work with local jurisdictions and /or growers to ensure that agricultural workers are notified as soon as possible of the potential for a loss of jobs once special project locations have been identified. Reclamation will encourage the local jurisdictions and /or growers to provide timely information and assistance to agricultural workers regarding the availability of alternative employment.	None
HAZARDS AND HAZARDOUS MATERIALS						
HAZ-1: The use of pesticides, lubricants, fuels, and other hazardous materials during construction, operations, and maintenance could result in localized spills, which could create a hazard to the environment ( <i>less than significant impact</i> )..	X	X	X	X	None required	None
HAZ-1: The increase in riparian and backwater areas could result in an increase in vectors ( <i>less than significant impact</i> ).	X	X	X	X	None required	None
HYDROLOGY						
HYDRO-4: Conservation area establishment would result in a long-term improvement to water quality if agricultural land were used ( <i>beneficial impact</i> ).	X	X	X	X	None required	None
RECREATION						
REC-1: The implementation of certain conservation measures could result in the loss of recreational opportunities ( <i>less than significant impact</i> ).					None required	None
SOCIOECONOMICS						

SOC-1: Agricultural jobs would be lost if agricultural land were converted to conservation areas.	X	X	X	X	None required	None
SOC-2: Agricultural-related revenue would be lost if agricultural land were converted to conservation areas.	X	X	X	X	None required	None
SOC-4: Local sales tax from the purchase of products related to agricultural uses would be reduced if privately owned agricultural land were placed in public ownership.	X	X	X	X	None required	None

**APPENDIX B.** Avoidance, Minimization, Monitoring, and Research Measures applicable to the Proposed Action and Combination Alternative from the LCR MSCP Habitat Conservation Plan (Chapter 5, pages 5-30 to 5-33)

AMM1. To the extent practical, avoid and minimize impacts of implementing the LCR MSCP on existing covered species habitats.

AMM3. To the extent practicable, avoid and minimize disturbance of covered bird species during the breeding season.

AMM4. Minimize contaminant loads in runoff and irrigation flows from LCR MSCP-created habitats to the LCR.

AMM6. Avoid or minimize impacts on covered species habitats during dredging, bank stabilization activities, and other river management actions.

Monitoring and Research Measures (pp 5-33 to 5-34)

MRM1. Conduct surveys and research to better identify covered and evaluation species habitat requirements (on going).

MRM2. Monitor and adaptively manage created covered species and evaluation species habitats.

MRM4. Conduct research to determine and address the effects of brown-headed cowbird nest parasitism on reproduction of covered species.

MRM5. Evaluation of selenium concentrations in created marshes and backwaters.



**APPENDIX C: Additional Mitigation Measures or Best Management Practices applicable to the Proposed Action and Combination Alternative tiered from the LCR MSCP FEIS/FEIR**

**Cultural Resources**

3.5-16: “Prior to implementing specific projects, LCR MSCP participants would be required to comply with the environmental compliance and historic preservation laws and regulations in effect at the time.”

3.5-17: Mitigation Measure CULT-1 Nine standard measures, (four of which apply to the Proposed Action and Combination Alternative), need to comply with the National Historic Preservation Act, etc. Measures include SHPO consultations, modifying design to avoid cultural resources, and development of a Cultural Resources Construction Monitoring Plan prior to construction.

1. Consult with the appropriate SHPO(s), tribes, and other interested parties, perform archival research, interview informants, and conduct cultural resource inventories during site-specific environmental review to identify any cultural resources that may be affected. Consult with geologists, geo-morphologists, and/or geophysicists to determine if there are areas that may contain buried cultural deposits and to determine the appropriate methods/techniques for locating these. Implement subsurface exploration activities as a part of the inventory and identification program.
2. Evaluate all identified cultural resources for potential listing on the NRHP or state or local registers with respect to applicable criteria and appropriate historic themes, research questions, and data requirements as identified in regional, local, and/or project specific historic contexts.
3. In the event of an unanticipated cultural resource discovery during construction, re-direct construction to other areas until the discovery has been documented by a qualified archaeologist and its potential significance evaluated in terms of applicable criteria. Resources considered significant would be avoided or subject to a testing and evaluation program and/or a data recovery program as described above.
4. If the project has the potential to discover or otherwise result in the excavation of Native American cultural items on Federal or tribal lands, then the appropriate Federal agency or agencies will initiate consultation with any known lineal descendants and relevant Indian tribes as per the Native American Graves Protection and Repatriation Act (NAGPRA). Consultation would identify, among other things, procedures that would be followed in the event that project-related activities resulted in the excavation or discovery of Native American human remains on Federal or tribal lands. If cultural resources or human remains were discovered on non-Federal or non-tribal lands, state and local laws would be followed.



### Best Management Practices for Land Disturbing Activities

3.0-4: The Best Management Practices (BMPs) of the state in which construction occurred would be used to control sedimentation in the vicinity of water bodies during ground-disturbing activities. Typical measures that could be used include the following:

1. Providing for temporary pollution control measures such as dikes, basins, ditches, diversions, silt fences, and the application of straw and seed, to be functional prior to land disturbing activities;
2. Minimizing the area to be cleared and graded to the extent possible;
3. Erecting barriers, covers, shields, and other protective devices as necessary to prevent any construction materials, equipment or contaminants/pollutants from falling or being thrown into a watercourse;
4. Prohibiting the placement of oily or greasy substances originating from the contractor's operations where they would later enter a stream or watercourse;
5. Storing and transporting fuel in appropriate safety containers.
6. Mixing and loading hazardous materials in an accepted manner to prevent spills or leakage.
7. Disposing of used containers in accordance with regulatory standards.